This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

What is claimed is:

1. (Currently Amended) An internal combustion engine comprising:

a housing;

an intake port defined in the housing;

an exhaust port defined in the housing;

a generally cylindrical combustion chamber defined in the housing and communicating with the intake port and the exhaust port; and

a combustion geroter received by the combustion chamber and rotatable therein to receive a fuel mixture, compress the fuel mixture, combust the fuel mixture, and discharge the combusted fuel mixture to the exhaust port, the geroter including an outer gear and an inner gear, the inner gear including a shaft aperture and otherwise being substantially solid.

2. (Original) The internal combustion engine of claim 1, wherein the combustion geroter includes an inner gear and an outer gear that rotate within the combustion chamber, wherein the inner gear rotates about a first axis, and the outer gear rotates about a second axis that is spaced from and substantially parallel to the first axis.

3. (Original) The internal combustion engine of claim 2, wherein the inner and outer gears cooperate to define a plurality of ignition chambers that receive the fuel mixture, and wherein the ignition chambers increase and decrease in volume as the inner and outer gears rotate.

4. (Original) The internal combustion engine of claim 3, wherein the combustion chamber includes an aperture defined in the geroter housing and positioned to communicate with the ignition chambers when the ignition chambers are at a maximum volume and when the ignition chambers are decreasing in volume, and wherein the fuel mixture flows through the aperture and into the ignition chambers.

5. (Original) The internal combustion engine of claim 3, wherein the exhaust port includes an aperture that is positioned to communicate with the ignition chambers when the ignition chambers are increasing in volume.

6. (Original) The internal combustion engine of claim 1, wherein the fuel mixture is combusted due to a pressure increase that occurs as the fuel mixture is compressed by the combustion geroter.

7. (Original) The internal combustion engine of claim 1, further comprising a spark plug positioned in the combustion chamber to combust the fuel mixture as the combustion geroter compresses the fuel mixture.

8. (Original) The internal combustion engine of claim 1, further comprising:

a generally cylindrical compression chamber defined in the geroter housing and communicating with the intake port;

an intermediate manifold providing communication between the compression chamber and the combustion chamber;

a compressor geroter received by the compression chamber and rotatable therein to receive the fuel mixture from the intake port, compress the fuel mixture, and discharge the compressed fuel mixture to the intermediate manifold; and

a drive shaft coupling the compressor geroter and the combustion geroter for rotation together, wherein the combustion geroter receives the compressed fuel mixture from the intermediate manifold.

9. (Original) The internal combustion engine of claim 8, wherein the compressor geroter includes an inner gear and an outer gear that rotate within the compression chamber, wherein the inner gear rotates about a first axis, and the outer gear rotates about a second axis that is spaced from and substantially parallel to the first axis.

10. (Original) The internal combustion engine of claim 9, wherein the inner and outer gears cooperate to define a plurality of charge chambers that receive the fuel mixture, and wherein the charge chambers increase and decrease in volume as the inner and outer gears rotate.

11. (Original) The internal combustion engine of claim 10, wherein the intake port includes an aperture defined in the geroter housing and positioned to communicate with the charge chambers when the charge chambers are increasing in volume.

12. (Original) The internal combustion engine of claim 10, wherein the intermediate manifold includes an aperture defined in the geroter housing and positioned to communicate with the charge chambers when the charge chambers are decreasing in volume.

13. (Currently Amended) A method for rotatably driving a drive shaft comprising:

providing a first geroter having an inner gear coupled to the drive shaft and an outer gear engaging the inner gear;

providing a second geroter having a second inner gear coupled to the drive shaft and a second outer gear engaging the second inner gear;

delivering a fuel mixture to the first geroter;

compressing the fuel mixture in the first geroter;

directing the fuel mixture from the first geroter to a second geroter via an intermediate manifold, the intermediate manifold completely defined by a stationary housing between the first geroter and the second geroter;

combusting the compressed fuel mixture in the second geroter;

expanding the combusted fuel mixture in the second geroter to drivingly rotate the second geroter and the drive shaft; and

discharging the expanded fuel mixture from the second geroter.

14. (Currently Amended) The method of claim 13, further comprising:

providing an upstream geroter having an inner gear coupled to the drive shaft and an outer gear engaging the inner gear;

pre-compressing the fuel mixture in the ~~upstream~~ first geroter; and

communicating the pre-compressed fuel mixture from the ~~upstream~~ first geroter to the second geroter.

15. (Currently Amended) The method of claim 14, wherein compressing the fuel mixture in the first geroter comprises further compressing the pre-compressed fuel mixture in the second geroter.

16. (Currently Amended) The method of claim 13, wherein providing a second geroter includes providing ~~an~~ the second outer gear having N convex surfaces, and ~~an~~ the second inner gear having N-1 concave surfaces, and wherein N-1 compressed fuel mixtures are combusted during each second inner gear rotation.

17. (Original) The method of claim 13, wherein combusting the compressed fuel mixture in the geroter comprises combusting the compressed fuel mixture in response to a pressure increase of the compressed fuel mixture.

18. (New) An internal combustion engine comprising:

a stationary housing;

an intake port defined in the housing;

an exhaust port defined in the housing;

a first chamber defined in the housing;

a second chamber defined in the housing;

an intermediate manifold defined by the housing and extending from the first chamber to the second chamber;

a first geroter disposed within the first chamber and operable to receive a flow of fluid from the intake port, compress the flow of fluid, and discharge a compressed flow of fluid to the intermediate manifold; and

a second geroter disposed within the second chamber and operable to receive the compressed flow of fluid, combust the compressed flow of fluid, and discharge a flow of exhaust gas to the exhaust port.

19. (New) The internal combustion engine of claim 18, wherein the first geroter includes an outer gear and an inner gear, the inner gear being substantially solid and supported for rotation by a shaft.

20. (New) The internal combustion engine of claim 18, wherein the first geroter and the second geroter are substantially the same as one another.

21. (New) An internal combustion engine comprising:

a housing;

an intake port defined in the housing;

an exhaust port defined in the housing;

a generally cylindrical combustion chamber defined in the housing and communicating with the intake port and the exhaust port; and

a combustion geroter received by the combustion chamber and rotatable therein to receive a fuel mixture, compress the fuel mixture, combust the fuel mixture, and discharge the combusted fuel mixture to the exhaust port,

wherein the combustion geroter includes an inner gear and an outer gear that rotate within the combustion chamber, wherein the inner gear rotates about a first axis, and the outer gear rotates about a second axis that is spaced from and substantially parallel to the first axis, wherein the inner and outer gears cooperate to define a plurality of ignition chambers that receive the fuel mixture, wherein the ignition chambers increase and decrease in volume as the inner and outer gears rotate, and wherein the exhaust port includes an aperture that is positioned to communicate with the ignition chambers when the ignition chambers are increasing in volume.

22. (New) An internal combustion engine comprising:

a housing;

an intake port defined in the housing;

an exhaust port defined in the housing;

a generally cylindrical combustion chamber defined in the housing and communicating with the intake port and the exhaust port;

a combustion geroter received by the combustion chamber and rotatable therein to receive a fuel mixture, compress the fuel mixture, combust the fuel mixture, and discharge the combusted fuel mixture to the exhaust port;

a generally cylindrical compression chamber defined in the geroter housing and communicating with the intake port;

an intermediate manifold providing communication between the compression chamber and the combustion chamber;

a compressor geroter received by the compression chamber and rotatable therein to receive the fuel mixture from the intake port, compress the fuel mixture, and discharge the compressed fuel mixture to the intermediate manifold; and

a drive shaft coupling the compressor geroter and the combustion geroter for rotation together, wherein the combustion geroter receives the compressed fuel mixture from the intermediate manifold, wherein the compressor geroter includes an inner gear and an outer gear that rotate within the compression chamber, wherein the inner gear rotates about a first axis, and the outer gear rotates about a second axis that is spaced from and substantially parallel to the first axis, and wherein the inner and outer gears cooperate to define a plurality of charge chambers that receive the fuel mixture, and wherein the charge chambers increase

and decrease in volume as the inner and outer gears rotate, and wherein the intake port includes an aperture defined in the geroter housing and positioned to communicate with the charge chambers when the charge chambers are increasing in volume.